
PART 1 GENERAL

1.1 REFERENCE

- .1 Comply with the General Conditions of the Contract, Supplementary General Conditions and the requirements of Division 1.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Installation of H.M. Frames
in Unit Masonry Section 04200
- .2 Installation of H.M. Doors
Rough Carpentry Section 06100
- .3 Installation of Hardware
Rough Carpentry Section 06100
- .4 Finish Hardware (incl Louvres)
[Supply only] Section 08710
- .5 Miscellaneous Glass and Glazing Section 08800
- .6 Painting Section 09900

1.3 SCOPE OF WORK INCLUDED

- .1 Supply and preparation of Hollow Metal Doors and Door Frames.

1.4 SUBMITTALS

- .1 Submit shop drawings in accordance with Section 01340.
- .2 Clearly indicate each type of door and frame, the material being supplied, the type of primer, cut-outs and reinforcement for hardware, anchors and locations of exposed fastenings. Sizes are to be based on job measurements where required.
- .3 Submit information on the standard shop drawing sheets as approved by the Canadian Steel Door and Frame Manufacturer's Association (CSDFMA).
- .4 Prior to issuing shop drawings to Consultant for review, submit shop drawings to finish hardware supplier for co-ordination and review. Shop drawings released to consultant for review shall contain contractor's review stamp and acceptance signatures. Consultant's review of shop drawings is not intended to be a detailed review of hardware co-ordination points.

1.5 QUALITY ASSURANCE

1. Quality Standards : Perform work of this Section in accordance with requirements of Canadian Manufacturing Specifications for Steel Doors and Frames, January 1978, of Canadian Steel Doors and Frames Manufacturer's Association (CSDFMA), except as otherwise specified herein.
3. Co-ordination : Give full co-operation to finish hardware distributor's representative during preparation of shop drawings and execution of shop fabrication.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 **Sheet Steel** : Cold rolled sheet, rolled to stretcher levelled flatness tolerances. Commercial grade steel to ASTM-A568-81 Class 1, hot dipped galvanized to ASTM-A525-81, ZF75 (A25). Steel shall have a rockwell hardness of Rockwell 'B' maximum of 65 (ASTM E103) and suitable for forming and bending without metal or coating fracture. Doors and door frames shall have Z075 galvanizing or equivalent. Door frames and window frames in the apparatus bay are to have galvanizing (G90) as noted in the door schedule.
- .2 **Steel Plate and Sheet Thickness** : Minimum dimensions shall be in accordance with Canadian Manufacturing Specifications for Steel Doors and Frames, January 1978, of CSDFMA, except as specified herein or shown :
- | | Gauge |
|-------------------------------------|----------|
| .1 Door facings: exterior doors | 16 |
| .2 Door facings: interior doors | 16 |
| .3 Door frames: interior / exterior | 16 |
| .4 Screen frames: interior | 16 |
| .5 Glazing stops and lite trim | 20 |
| Top cap for exterior doors: | 18 |
| .6 Hardware reinforcing : | |
| 1. Butts & Pivots: | 10 steel |
| Note Continuous Hinge on some doors | |
| 2. Panic Bar: | 10 steel |
| 3. Locks: | 12 steel |
| 4. Closers: | 10 steel |

- .4 **Sound Retardant** : Loose Fibreglass, 1.5 pcf.
- .5 **Insulated Core** :Polystyrene R6.5 Insulation
- .6 **Primer** : Zinc rich primer conforming to CGSB 1-GP-181M.
- .7 **Rubber Door Bumpers** : Glynn Johnson No. 64 or similar approved type.
- .8 **Metal Filler** : Two component epoxy type.
- .9 **Phosphatizing** : CGSB 31-GP-105a.

PART 3 EXECUTION

3.1 EXAMINATION

- .1 Take field dimensions of Work upon which Work of this Section depends before fabrication. Field adaptation of Work fabricated in error or without field check will not be allowed without Consultant's approval.
- .2 Obtain all necessary templates for drilling, tapping, and other preparatory work to accommodate the hardware.

3.2 FABRICATION - FRAMES

- 1. Form frame profiles accurately to details indicated.
- 2. Blank, drill, reinforce and tap frames to receive templated strikes and hinges. Reinforce frames for application of surface mounted hardware as per hardware schedule.
- 3. Cut frames accurately and weld continuously on inside of frame profile.
- 4. Grind welded frame corners to a smooth finish. Apply one coat of primer to door frame for touch up of welds due to weld and grinding (ie where zinc coating has been removed).
- 5. Fill exposed joints and surface depressions in frames with metallic paste and sand to a smooth finish.
- 6. Prepare each door frame for rubber stud bumpers. Install 3 bumpers per door.

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7. Protect strike and hinge reinforcement by mortar guard boxes welded to frame. Protect electric strike and electric hinge reinforcement by mortar guards with 1/2" connectors welded to frame.
 8. Provide 2 channel or angle spreaders per frame to ensure proper alignment. Weld in spreaders where frames extend below floors.
 9. Where frames terminate at finished floors provide anchorage plates to suit floor construction and securely weld to inside of each jamb profile. Extend jambs of doors having power operators up to and down to firm concrete structure.
 10. Frames for installation in masonry walls to be provided with adjustable anchors to suit wall conditions of the T strap or L strap types. The numbers of anchors provided on each jamb to be :
 1. Frames up to 8' - 0": 4 T strap anchors or 8 L strap
 2. Frames higher than 8' - 0": 1 T strap or 2 L strap per 2' of height or fraction thereof.
 11. Frames to be anchored to previously placed masonry or structural steel to be provided with anchors of suitable design as shown on reviewed shop drawings. Recess and conceal bolt heads.
 12. Insulate frames for exterior doors with fibreglass for full height and depth.

3.3 FABRICATION - DOORS

- .1 Assemble components of steel stiffened doors by means of adequate spot welding or arc welding of stiffeners and face sheets to provide a finished door, rigid, square and true and free of distortion. Provide continuous welded construction around perimeter of door, fill and grind smooth to conceal joints. Finish door faces to a smooth uniform surface.
- .2 Bevel flush strikes edges of doors 1/16" maximum per 2" thickness.
- .3 Install top and bottom steel channel closures to all exterior doors.

- .4 Mortise, reinforce, drill and tap doors to receive templated hardware. Provide locating clips for mortise locks.
- .5 Reinforce door to receive surface mounted hardware.
- .6 Reinforce fully glazed doors so that corner to corner racking of doors does not exceed 1/8". Reinforce door heads for frames with door openings exceeding width of 5'. Weld all reinforcement to frame in a manner to realize total strength potential.
- .7 Where glass openings or louvres are required, form integral cut-outs with steel framing and mouldings as required. Aluminum mouldings will not be permitted.
- .8 Equip glazed doors and glazed screens with removable stops, with mitred corners and as detailed, accurately fit stops in openings and loosely secure with oval headed screws at 6" o.c. Removable on secure side.
- .9 Welding shall conform to CSA W59-1982.
- .10 Fill voids in doors with sound retardant material full thickness of door.
- .11 Install wire raceways thru doors requiring electric door hardware.

3.4 FIRE DOORS AND FRAMES

- .1 In addition to complying with all requirements above, construct fire rated doors, frames and screens to ULC requirements and limitations including hardware preparation and Heat Transmission ratings Listed in MBC.
- .2 Conform to ULC minimum material thicknesses, but in no case less than Para. 2.1.2. Build in concealed locks and latches.
- .3 Provide ULC labels for all doors and frames in fire rated construction.
- .4 Provide ULC approved astragal for pairs of doors.
- .5 Locate ULC label on inside hinge jamb on frame.

- .6 Locate ULC label on the hinged edge of the door midway between the top hinge and the head of the door.

3.5 SHOP PAINTING

- .1 Chemically treat metal surfaces of doors and frames and touch up as per Standard. Clean, sand, flood coat with air drying paste filler and again sand to eliminate all unevenness and irregularities.
- .2 Wipe coated steel frames: touch up areas where wipe coating has been removed, using zinc rich paint.
- .3 Wipe coated steel doors: touch up areas where wipe coating has been removed, using zinc rich paint, and apply one full coat of rust inhibitive primer to CGSB-1-GP-105M.
- .4 Uncoated steel: Apply one coat of rust inhibitive primer conforming to CGSB-1-GP-105M.

3.6 INSTALLATION

- .1 Supply frames, accessories and instruction to site for appropriate trades to set in place and build.
- .2 Remove all marks and soil from surfaces, attributable to work of this section, by cleaning in a safe and thorough manner.

END OF SECTION